I claim:

1. A transducer for surface acoustic waves, said transducer comprising a plurality of interdigitized electrode fingers, including at least one interdigitized electrode finger which is provided with a shape that changes in width along said finger's length, provided that where a transducer is tapered, said electrode finger width is not uniformly changed to maintain alignment with tapering of the transducer, thereby resulting in a combination of at least one of the SAW velocity dispersion effect along the fingers' lengths, the electromechanical coupling coefficient dispersion along the fingers' lengths, the electrostatic charge distribution along the fingers' lengths and the dispersion of the SAW reflection coefficient along the fingers' lengths such that a desired weighting effect is achieved.

2. A transducer according to claim 1, wherein said interdigitalized finger is provided with a shape which controls the diffraction effect by either focussing, scattering or deflection of SAW beam resulting from the SAW velocity dispersion effect along the electrode fingers' lengths.

3. A transducer according to claim 1, wherein said electrode fingers are arranged without regard to uniformity of periodicity along the lengths of electrode fingers.

4. A transducer according to claim 1, wherein said electrode fingers are arranged without regard to uniformity of periodicity in the direction of the wave propagation through said transducer.

5. A transducer according to claim 1, wherein said electrode fingers are generally of non-uniform lengths.

6. A transducer according to claim 1, wherein the shapes of said electrode fingers generally are not all identical.

7. A transducer according to claim 1, wherein said at least one interdigitized electrode finger has at least one edge shaped in the form of a curled bracket.

Sub B, cancel'd.

8. A transducer according to claim 1, wherein said at least one interdigitized electrode finger has at least one edge in the form of a rounded bracket.

9. A transducer according to claim 1, wherein said at least one interdigitized electrode finger has at least one edge in the form of a refracted line.

10. A transducer according to claim 1, wherein said at least one interdigitalized electrode finger has the shape of a rhombus.

11. A transducer according to claim 1, wherein said at least one interdigitized electrode finger has at least a portion of one edge in the form of a curled bracket.

12. A transducer according to claim 1, wherein said at least one interdigitized electrode finger has at least a portion of one edge in the form of a rounded bracket.

13. A transducer according to claim 1, wherein said at least one interdigitized electrode finger has at least a portion of one edge in the form of a refracted line.

14. A transducer according to claim 1, wherein said at least one interdigitized electrode finger has trapezoidal form.

15. A transducer according to claim 1, wherein said at least one interdigitized electrode finger has at least a portion of one edge in the form of a bell.

16. A method for weighting a SAW transducer comprising providing at least one electrode finger with a shape such that the SAW wave velocity is dispersed along the finger's length.

17. The method according to claim 16, wherein at least a portion of said at least one electrode finger is provided with the shape of curled-brackets.

18. The method according to claim 17, wherein said curled-brackets comprises a curve which can be calculated as inverse-cosine.

19. The method as recited in claim 16, wherein said at least one electrode finger is provided in the shape of a rhombus.

20. The method as recited in claim 16, wherein at least a portion of said at least one electrode finger is provided in the shape of rounded-brackets.

21. A method for weighting a SAW transducer comprising providing at least one electrode finger with a shape such that the SAW reflection coefficient is dispersed along said shaped electrode finger's length.

22. A method for controlling the diffraction spreading of SAW beams in a SAW transducer, said method comprising providing at least one electrode finger of said transducer with a shape that changes in width along said finger's length, thereby using the SAW velocity dispersion effect.

23. A SAW transducer having electrode fingers shaped in order to produce a SAW velocity dispersion effect.